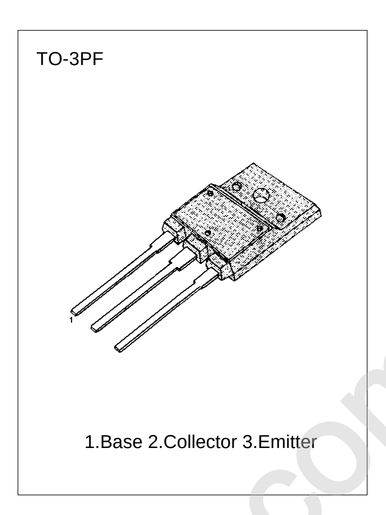
KSD5072 NPN TRIPLE DIFFUSED PLANAR SILICON TRANSISTOR

COLOR TV HORIZONTAL OUTPUT APPLICATION (DAMPER DIODE BUILT IN)

- High Collector-Base Voltage (V_{CBO}=1500V)
- High Switching Speed (t_F. max=0.4µs)



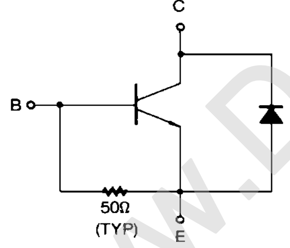
ABSOLUTE MIXIMUM RATING

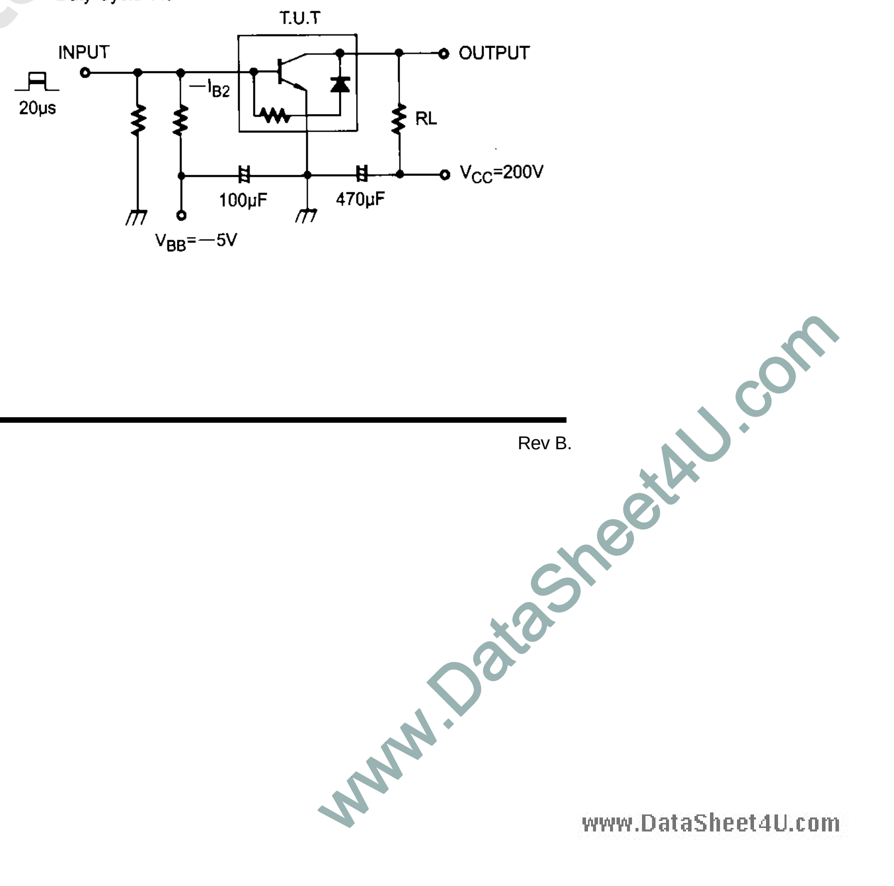
Characteristic	Symbol	Rating	Unit
Collector Base Voltage	V_{CBO}	1500	V
Collector Emitter Voltage	V_{CEO}	800	V
Emitter Base Voltage	V_{EBO}	6	V
Collector Current	I_C	5	A
Collector Current (Peak)	I_C	16	A
Collector Dissipation (T_C=250°C)	P_C	60	W
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-55 ~ 150	°C

ELECTRICAL CHARACTERISTICS (T_C=25°C)

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Collector Cutoff Current	I_{CBO}	V_{CB} = 800V, I_E = 0			10	µA
Emitter Cutoff Current	I_{EBO}	V_{EB} = 4V, I_C = 0	40		200	mA
DC Current Gain	h_{FE}	V_{CE} = 5V, I_C = 1A	8			-
Collector Emitter Saturation Voltage	V_{CE}(sat)	I_C = 4A, I_B = 0.8A		3	5	V
Base Emitter Saturation Voltage	V_{BE}(sat)	I_C = 4A, I_B = 0.8A			1.5	V
Current Gain Bandwidth Product	f_T	V_{CE} = 10V, I_C = 1A		3		MHz
Damper Diode Turn On Voltage	V_F	I_F = 5A			2	V
Fall Time	t_F	I_C = 4A, I_B1 = 0.8A I_B2 = - 1.6A, V_{CC} = 200V R_L = 50Ω			0.4	µs

-EQUIVALENT CIRCUIT





Rev B.



STATIC CHARACTERISTIC

I_B=2.0, I_B=1.8, I_B=1.6, I_B=1.2, I_B=800, I_B=600, I_B=400, I_B=200

I_C(A), COLLECTOR CURRENT

V_{CE}(V), COLLECTOR-EMITTER VOLTAGE

DE CURRENT GAIN

V_{CE}=5V

h_{FE}, DC CURRENT GAIN

I_C(A) COLLECTOR CURRENT

COLLECTOR-EMITTER SATURATION VOLTAGE

I_C/I_B =5, I_C/I_B =3

V_{CE}(sat), (V) SATURATION VOLTAGE

I_C(A) COLLECTOR CURRENT

BASE-EMITTER SATURATION VOLTAGE

V_{CE}=5V

I_C(A) COLLECTOR CURRENT

V_{BE} (V), COLLECTOR BASE COLLECTOR

SWITCHING TIME

I_C=4A, I_{B1}=0.8A, R Load, V_{CC}=200V

t_{stg}, t_f

t_{STG}(μs), STORAGE TIME t_F(μS), FALL TIME

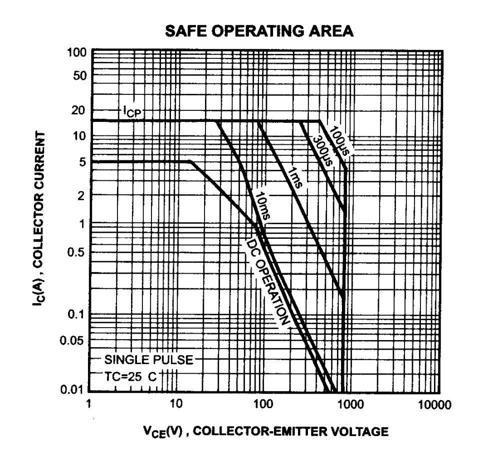
I_{B2}(A) , BASE CURRENT

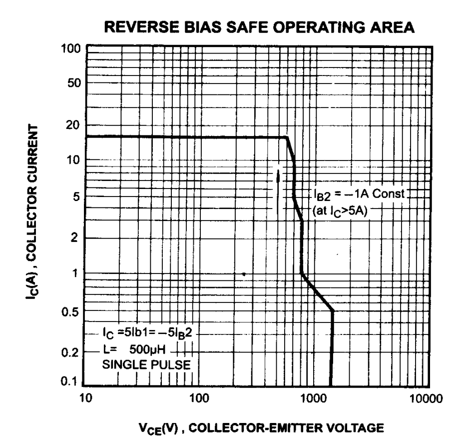
POWER DERATING

P_D(W), POWER DISSIPATION

T_C(C) , CASE TEMPERATURE




SAFE OPERATING AREA
I_C(A), COLLECTOR CURRENT
V_{CE}(V), COLLECTOR-EMITTER VOLTAGE
I_{CP}
100μs
300μs
1ms
10ms
DC OPERATION
SINGLE PULSE
TC=25 C


REVERSE BIAS SAFE OPERATING AREA
I_C(A), COLLECTOR CURRENT
V_{CE}(V), COLLECTOR-EMITTER VOLTAGE
I_{B2} = −1A Const
(at I_C>5A)
I_C =5Ib1= −5I_B2
L= 500μH
SINGLE PULSE


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